Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Adaptrum, Inc. Request for Waiver of	)	
Section 15.709(b)(2) of the	)	Docket No. 14-187
Commission's Rules	)	

To: Chief, Office of Engineering and Technology

RESPONSE TO REPLY COMMENTS OF NATIONAL ASSOCIATION OF BROADCASTERS

SUMMARY

In its December 9, 2014 *Reply Comments*[1] to this proceeding, National Association of Broadcasters ("NAB") opposed the grant of this waiver and stated that "Adaptrum appears to have flaunted the Commission's related rules to date". This response addresses NAB statements.

[1] *Reply Comment of NAB*, Docket 14-187, December 9, 2014 (http://apps.fcc.gov/ecfs/document/view?id=60001008546)

ALLEGED RULE VIOLATIONS

NAB states

> It is well understood that parties are expected to request and obtain rule waiver authorizing their deployments before actually deploying. Yet, in this case, Adaptrum appears to have already installed equipment pursuant to a waiver the Commission has yet to grant.[2]

NAB is incorrect. The waiver request in this proceeding addresses the antenna height limit of §15.709(b)(2). NAB offers no evidence that the antennas shown in the attachment exceed the present 30m maximum height other than saying a photo on the Adaptrum website showed antennas on "at least one large tower"[3]. In fact, all antennas installed to connect client sites are within the current 30m FCC height limit[4]. The photos in the attachment are from the Adaptrum website which contains no statement as to the height of the TVBD antennas on the towers.

NAB further states

> In addition, waiver or no, current TVWS rules require Adaptrum to register devices in the TVWS database. NAB can find no such registration for Adaptrum's devices in Maine.[5]

As of the date of NAB's filing, the statement about lack of registration in TVWS database is correct. We did not perform the device registration for the following reasons:

The hardware used at the sites is an FCC certified model, ACRS 2.0, FCC ID A2UACRS20F. However, for the Northern Maine deployment, we are still at an experimental installation and testing stage trying different antenna locations and

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[2] *ibid*. at p. 2
[3] *ibid*. at p. 2
[4] 47 C.F.R. §15.709(b)(2)
[5] *ibid*. at p. 3

configurations. Because of these are test installs instead of permanent installs, we have been using a test version of the software where channel selection is done manually and database registration is not performed. The channels used were based on the Google TVWS database lookup – noting that there are zero TV channels in use in the deployment area location as shown below.

Prior to the adoption of the *Report and Order* in Docket 10-236 in January 2013[6], such an installation clearly would have required an experimental license. That decision extended the provisions of §2.805 on "operation of radio frequency devices prior to equipment authorization". These eliminated the need for an experimental license for tests by manufacturers for the "(e)valuation of performance and determination of customer acceptability, during developmental, design, or pre-production states."

§2.805(e)(1) requires that for such use

> "The radio frequency device shall be operated in compliance with existing Commission rules, waivers of such rules that are in effect at the time of operation, or rules that have been adopted by the Commission but that have not yet become effective;"

We thought the extension of the experimental licensing rules above also applies to the current testing conducted in Maine. We acknowledge NAB's point about device registration for rules compliance in their reply comments and we have since arranged with our wireless ISP partner to turn on the radios only after they have been registered with the databases following proper procedures. We hope this will address any possible compliance questions going forward.

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[6] *Report and Order*, Docket 10-236, (January 31,2013) (https://apps.fcc.gov/edocs_public/attachmatch/FCC-13-15A1.pdf_

This area of Northern Maine is a vast wasteland for TV broadcasting. The attachment shows data from the FCC's own records on the available TV coverage in Machias, ME. The Adaptrum ACRS 2.0 TVWS device covers UHF only and operates within the frequency range 473.0 - 695.0 MHz. As shown in the attachment, there are no UHF TV stations anywhere in the area. Not only we have performed TV white space channel lookup using Google TVWS databases, we also physically manually checked the spectrum for UHF signals before turning on the base stations and confirmed from actual spectrum monitoring that no active TV channels were present. The goal of protecting TV reception was met in our operations through these procedures and there was never any interference threat to what little TV reception is available in this remote area.

GUARDBAND ISSUE

NAB urges the Commission to require extra guardbands in the event the waiver is granted:

> (I)t should at a minimum require Adaptrum to operate with two vacant television channels on either side of the channel on which these devices operate – that is, on the central channel of five vacant, contiguous channels. While operation at higher antenna heights permits greater communication range, such extended range also means that the interference potential from these devices will extend to a further distance, thereby significantly increasing the potential for harm.

Excessive guardbands merely decrease service opportunities to citizens in an area where there is now little over-the-air TV or broadband. If NAB is concerned about interference to actual signals, let them propose a maximum field strength at the contour of actual adjacent channel TV stations and Adaptrum will gladly meet such a field strength limit.

The Commission was created to

> " make available, so far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, Nation-wide… radio communication service with adequate facilities at reasonable charges"[7]

not to protect nonexistent TV signals in remote areas. TVWS is a secondary service and Adaptrum will protect all primary services in the US and nearby Canada.

Perhaps it was not clear enough in the Waiver Request that we were not interested in unlimited heights. We clarify this here by stating that we only ask a waiver up to a height of 250 feet or 76 m for the area in question.

WAIVER AND ONGOING RULEMAKING

NAB opposes a waiver grant during the pendency of a rulemaking that includes such a provision, stating

> It is also relevant that the Commission currently has an open proceeding examining potential modifications to the rules for unlicensed operation, and whether these modifications can be made without causing harmful interference to licensed operations. Indeed, the Commission expressly seeks comment on the question of whether limits on antenna height above ground can safely be raised in rural areas. While one commenter claims the FCC has already recognized the benefits of operation at increased heights, in fact, the FCC is actively seeking input on this very issue, and has yet to reach any conclusion. NAB respectfully submits this issue is more properly addressed in a rulemaking proceeding, based on thorough technical analysis.[8]

The fact that FCC has already proposed a similar provision as a permanent rule means that FCC has made a preliminary finding that higher heights are reasonable in certain circumstances. The tentative finding after the filing of the waiver request supports the granting of the waiver and does not provide any rationalization for delaying

[7] 47 U.S.C. 151
[8] *Reply Comments of NAB*, *op. cit.* at p. 4

it. NAB must be aware that granting waivers during a rulemaking is a common occurrence in FCC practice[9] and does not prejudice the outcome of the rulemaking. Indeed, only a few months ago NAB requested a waiver for its members during a pending rulemaking unrelated to TVBDs and did not indicate any concerns about prejudicing *that* rulemaking[10]. Indeed, experience gained during the waiver consideration and operational experience during the waiver actually inform the Commission's deliberations.

CONCLUSION

This requested waiver is a remote area in the far northeast corner of the Commission's jurisdiction in a rural county best known for its wild blueberry harvest and as being the site of the first naval battle in the Revolutionary War. The residents of this area are now underserved by both broadcast television and broadband services. The waiver will test the ability of TVBD technology to serve economically such a remote heavily wooded area.

The Commission's decision should be based on its traditional criteria codified in §1.925(b)(3) as well as the ample precedents of granting waivers during appending rulemaking. NAB has provided no new information with respect to these criteria. If anything, the pendency of the rulemaking makes this waiver more important for all parties.

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[9] *Order,* Petition of DIRECTV Group, Inc. and EchoStar LLC for Expedited Rulemaking to Amend Section 1.2105(a)(2)(xi) and 1.2106(a) of the Commission's Rules and/or for Interim Conditional Waiver, RM-11395, August 29, 2014 (https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-130A1.pdf)

[10] Comments of NAB, MB Docket No. 03 – 185, August 14, 2014 (http://www.nab.org/documents/filings/ATBARequestForWaiverComments081414.pdf)

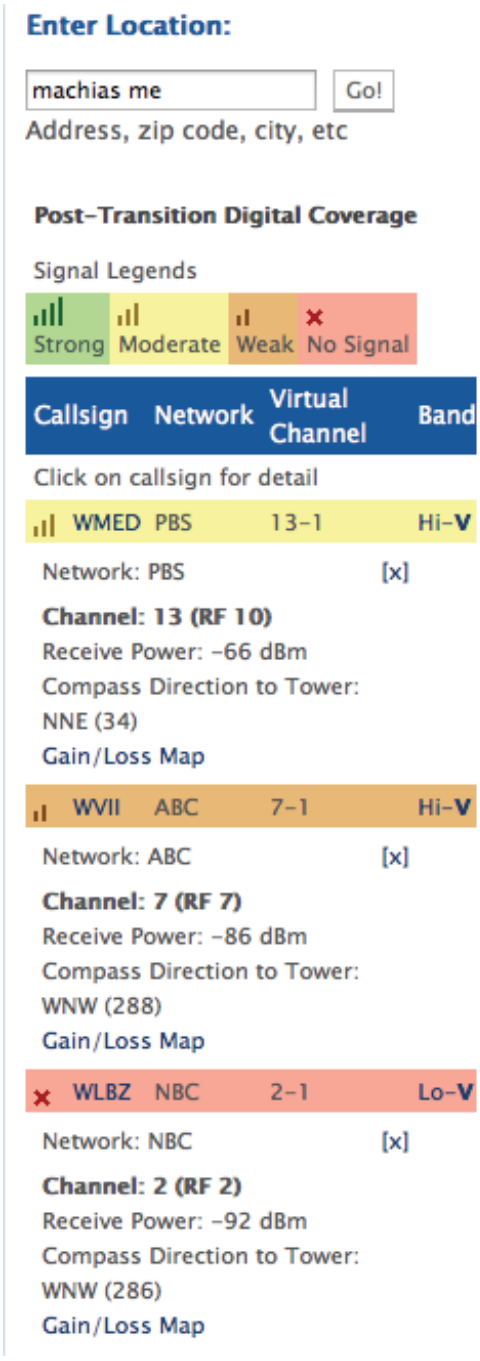
Adaptrum will take additional steps to ensure device registration is performed as temporary testing goes forward. But the fact remains that there are no UHF TV channels on-air in the proposed deployment area in Northern Maine. At the height of 250 feet proposed in the waiver, the chance of interfering with nearby TV receivers is practically ZERO. Without TV white space and proper antenna height, many people in this rural area will not be able to enjoy the broadband Internet service that is goal of the Commission and which most of us in the rest of the country have taken for granted. We urge NAB to look beyond procedural matters and support our waiver application and help bring broadband to this rural part of Maine while adequately protecting primary spectrum users..

/S/

Haiyun Tang
CEO, Adaptrum, Inc.

cc: Julius Knapp
Alan Stilwell

Attachment: Actual TV Reception in Machias ME from FCC Website
(http://transition.fcc.gov/mb/engineering/dtvmaps/)



Enter Location:

machias me Go!

Address, zip code, city, etc

Post-Transition Digital Coverage

Signal Legends

Strong | Moderate | Weak | No Signal

Callsign	Network	Virtual Channel	Band
Click on callsign for detail			
WMED	PBS	13-1	Hi-V

Network: PBS [x]

Channel: 13 (RF 10)
Receive Power: -66 dBm
Compass Direction to Tower: NNE (34)
Gain/Loss Map

WVII	ABC	7-1	Hi-V

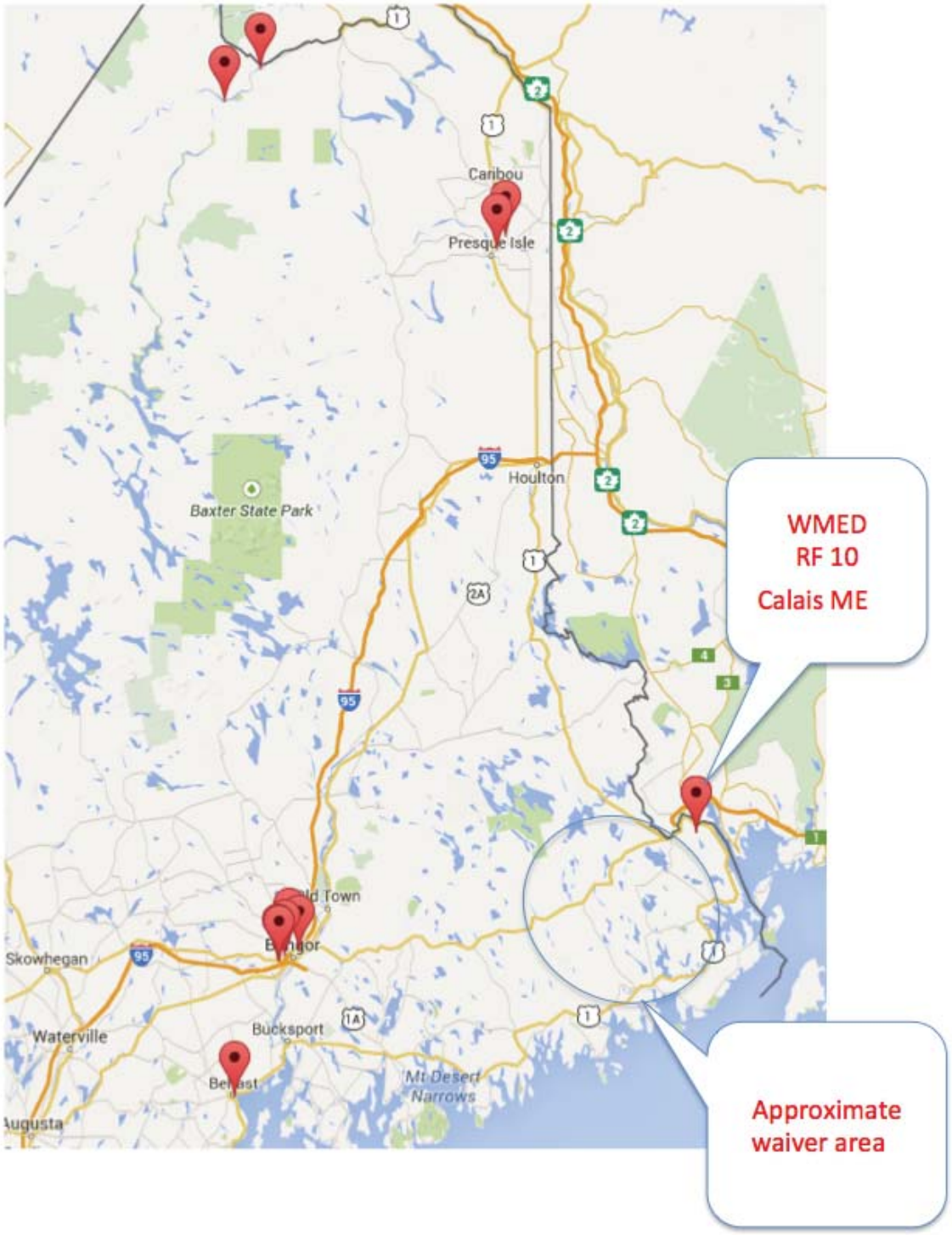
Network: ABC [x]

Channel: 7 (RF 7)
Receive Power: -86 dBm
Compass Direction to Tower: WNW (288)
Gain/Loss Map

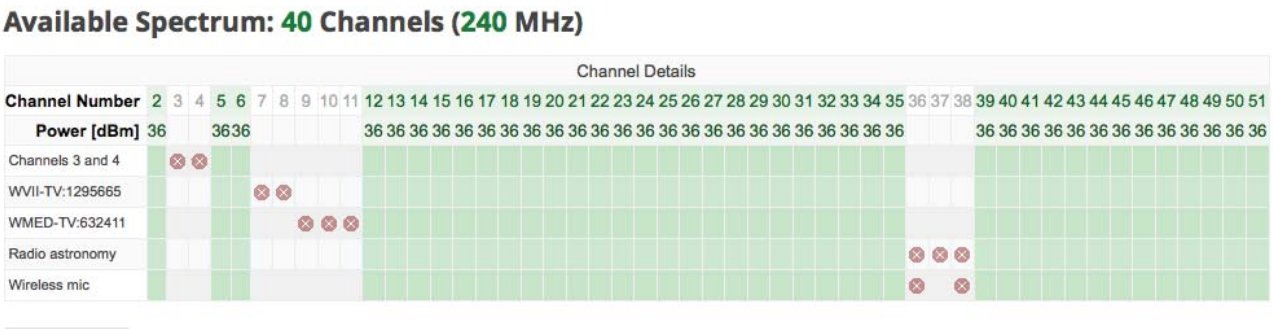
WLBZ	NBC	2-1	Lo-V

Network: NBC [x]

Channel: 2 (RF 2)
Receive Power: -92 dBm
Compass Direction to Tower: WNW (286)
Gain/Loss Map



TV Transmitter Locations in NE Maine (http://www.maine.info/maps/map.php?state=maine&city=all%20cities&cat=TV%20Stations&fix=1&zoom=6)



Available spectrum for fixed TVBD systems in Machias ME
(Google database presentation)